

REMARKS

Claims 1-18 are all the claims pending in the application, including new claims 13-18 added by the present Amendment.

Claims 1-12 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. Claims 1-12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Cane et al. (Pub. No. US 2001/0034737, hereafter "Cane '737") in view of Arun et al. (US 5,933,593, hereafter "Arun '593").

Applicant respectfully traverses the rejections with the following comments.

Regarding the rejection under § 112, second paragraph, Applicant submits that the claims are definite as currently claimed. The Examiner contends that the claims recite that each server includes another server, but Applicant submits that the claims do not recite such a feature. Rather, claim 1, for example, claims that each server comprises an updating information transfer unit for transferring updating information of a database to another one of the servers based on the replication trigger. In other words, the claims includes the transfer of updating information from one server to another. By contrast, the claims do not recite that a server includes another server. Hence, claim 1 and its dependent claims 2-6 are definite.

Likewise, claim 7 and its dependent claims 8-12 are definite for analogous reasons to those presented above for claim 1.

Turning to the prior art rejection, Applicant has the following comments.

Cane '737 relates to a method for administrating a differential file backup system in a client-server environment. In one embodiment, the method includes reducing the number of

access points associated with the components of a file that has been stored on the file backup system that include a base file and at least one delta file. A server reads data from a first memory device used by the file backup system. The data includes the base file and the at least one delta file of a backup file of interest and writes the data to a second memory device. The server then processes the data contained in the second memory device to reduce the number of access points the components of the backup file have across the first memory device.

In Cane '737, the server 102 receives the file data from the client 118 and processes this data to determine if the file has been stored before. Based on this determination, the database of the server 102 is updated and the database of the mirror server 110 is also updated. This is so-called a clustering system, in which the server 102 determines the update of the data and the mirror server 110 updates the database according to the determination. Each of these servers takes a role of its own. In the system of Cane '737, data location and data structure is the same in the database of the server 102 and the database of the mirror server 110.

By contrast, the present invention relates to a system in which a plurality of servers do not function completely differently for making a backup of the database, but each server makes a backup of other's database while each server updates its database based on the process by the clients connected to the server. In an exemplary embodiment of the present invention, the data of the database in each server is independently updated based on the requests from the client connected to the server regarding the insertion, change, or deletion of data in the database. At the same time, the update of the database in one server generates a data replication trigger to update the database in another server. Thus, data location and data structure in each database are not necessarily the same even though the data in these databases are substantially the same.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No. 09/819,612

1 Arun '593 relates to a method for writing modified data from a main memory of a
2 computer system back to a database. Modified data in memory is first gathered into a sequence
3 of modified data records; then the sequence of modified data records is written to disk as a
4 sequential write operation. Because the write operation is a sequential one, the seek time
5 associated with writing data scattered throughout a mass storage is eliminated. In this regard,
6 Arun '593 uses an update cache and provides updates to the main memory based on a least
7 recently used algorithm or a cache using sweep. Col. 3, lines 18-50. In Arun '593,
8 checkpointing is performed for sectioning the data in making backup data, and checkpoints are
9 used as markers in making the backup of a database. However, in Arun '593, there is no
10 disclosure about transferring updating information of a database using a plurality of servers to
11 transfer updating information to another server.

12 Applicant submits that the applied references fail to teach or suggest all of the limitations
13 of the claims of the present invention. Specifically, Cane '737 does not disclose a replication
14 trigger generator for generating a replication trigger based on the updating of the database by the
15 distributed data processing process performed by the clients, as recited by claim 1. The
16 Examiner asserts that paragraph 0031 of Cane '737 discloses these limitations of the claim, but
17 Applicant disagrees. Paragraph 0031 discloses the following:

The server 102 receives the file data marked for archival backup storage from the client 118 and processes this data to determine if the file has been stored before. If the file has not been stored, the server 102 will store the entire file on the first memory device 106 and provide a copy of the entire file to the mirror server 110. The mirror server 110 also stores the entire file on the first memory device 114 associated therewith. Both of the servers 102 and 110 update the appropriate disk database 104 and 112 respectively.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No. 09/819,612

The excerpt does not disclose the claimed replication trigger generator. In particular, the excerpt does not disclose generating the replication trigger based on the updating of the database by the distributed data processing performed by clients. Because the Examiner concedes that Cane '737 does not teach updated distributed processing performed by clients, the purported replication trigger cannot be updated based on such an event. Applicant requests that the Examiner either provide an explanation of the alleged teachings of Cane '737 or remove the reference as a basis for rejection. Hence, claim 1 and its dependent claims 2-6 are allowable over the prior art.

Furthermore, Cane '737 does not teach or suggest an updating information transfer unit for transferring updating information of the database to another one of the servers based on the replication trigger. Here, the Examiner cites paragraph 0031 again, as allegedly disclosing these features of claim 1. Applicant submits that the paragraph of the reference does not disclose transferring updating information based on the claimed trigger. Thus, claim 1 is allowable over the prior art for this reason also.

Additionally, claim 1 is allowable over the prior art, because the prior art fails to teach or suggest a system where each server includes the recited elements. The Examiner's reliance on paragraph 0030 indicates the arbitrary designation of one main site and one mirror site. While transfers occur between the main site and the mirror site, the system of Cane '737 does not require each server to include the recited elements and respond to a replication trigger from client sites. Therefore, claim 1 is allowable for this reason as well.

Finally, Applicant submits that Cane '737 and Arun '593 teach mutually different forms of database management that would teach away from their combination. The server-to-server

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No. 09/819,612

comparison of Cane '737 would not be conducive to a multiple-client environment, which controls database updates using a cache arrangement. Therefore, the claims are patentable for this additional reason.

Furthermore, Arun '593 fail to make up for the deficiencies of Cane '737

Also, claims 2-6 are allowable at least because of their dependence from claim 1.

For analogous reasons to those presented above for claim 1, claim 7 and its dependent claims 8-12 are allowable over the prior art.

With further regard to claims 2 and 8, the Examiner has not even asserted that the prior art teaches or suggests each of the limitations of these claims. Specifically, the Examiner has not asserted that the prior art discloses the limitations of claim 2 of a connection information manager for managing connection information of a connection destination server to which the clients are connected; and the arrangement being such that if any of the servers suffers a fault, the connection information is changed by the connection information changer, and the distributed data processing process performed by the clients connected to the server which suffers the fault is continued under the management of another normal one of the servers to which the connection information is changed. Thus, the rejection is deficient for at least this reason. The fault indication at paragraphs 0038 and 0039 cited by the Examiner does not require the arrangement as claimed.

Likewise, the Examiner has not even asserted that the prior art discloses each of the limitations of claims 3, 4, 10, and 12. Therefore, the rejection of these claims is deficient.

Regarding claims 5 and 6, the Examiner must evaluate and consider these claims. Claim 5 does not merely recite an intended use as the Examiner contends. Rather, the recitations

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No. 09/819,612

describe a type of interaction between the server and the client. Similarly, claim 6 describes an independent operation attributable to each server, providing an additional feature of the recited servers and is not a field of use. Since the Examiner failed to do reject the claims on the merits, any subsequent rejection must be made on a non-final basis.

Thus, all of claims 1-12 are allowable over the prior art, for at least the above-noted reasons.

New claims 13-18 are added to further define the invention.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

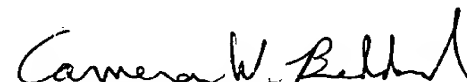
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Date: September 12, 2003